technique,
motif,
repetition:

TRADITIONAL RESIST USES FOR CONTEMPORARY TEXTILE PRACTICE

An exegesis submitted in fulfilment of the requirements for the degree of
Master of Arts (Textile Design)

Verity Prideaux
B. Textile Design

School of Fashion and Textiles
Design and Social Context Portfolio
RMIT University
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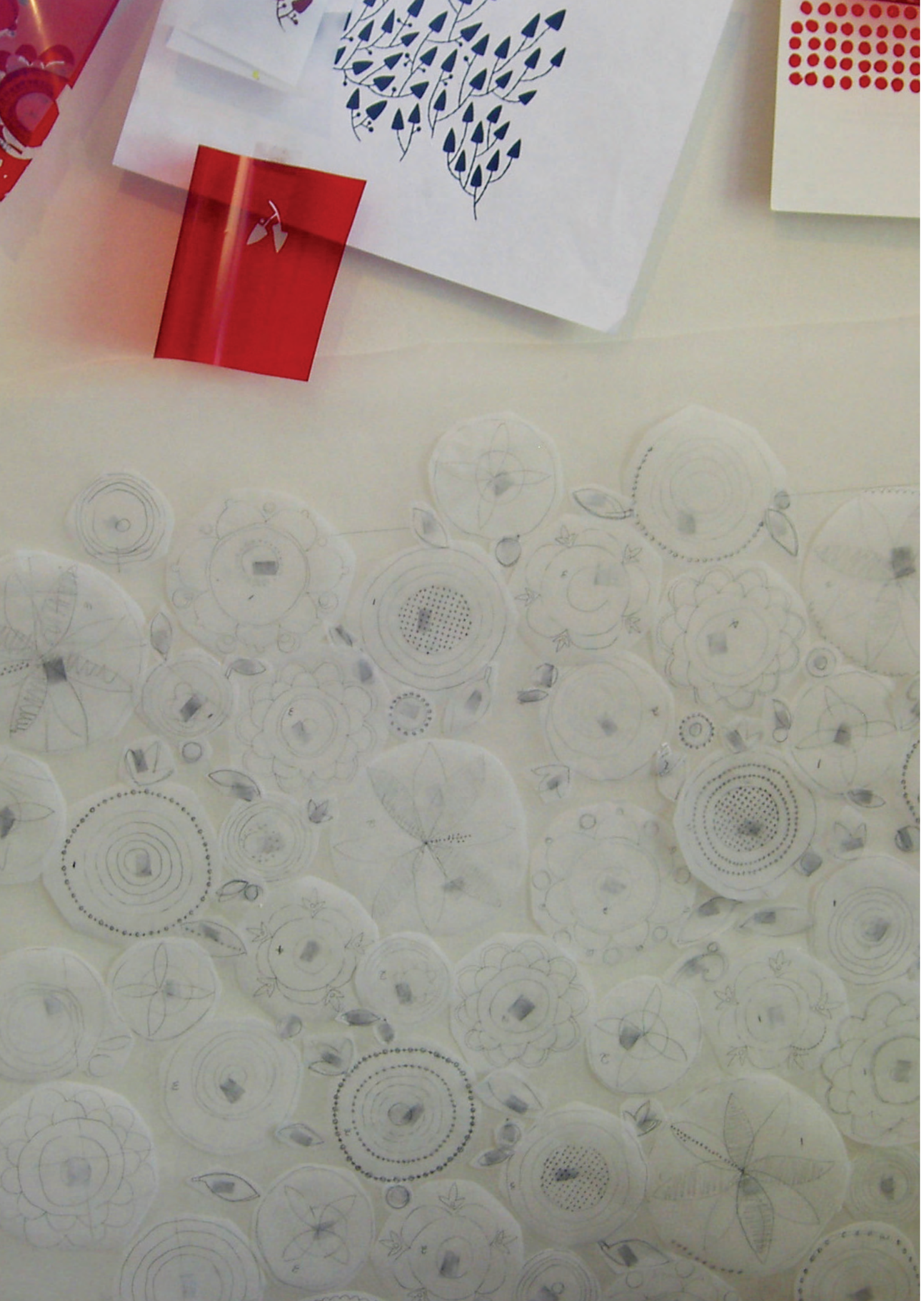
Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Verity Prideaux

August 2010



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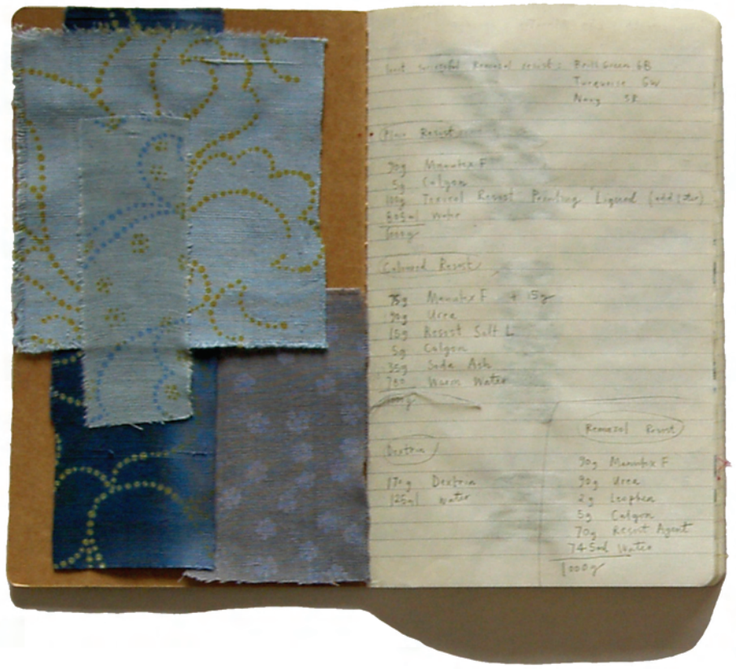
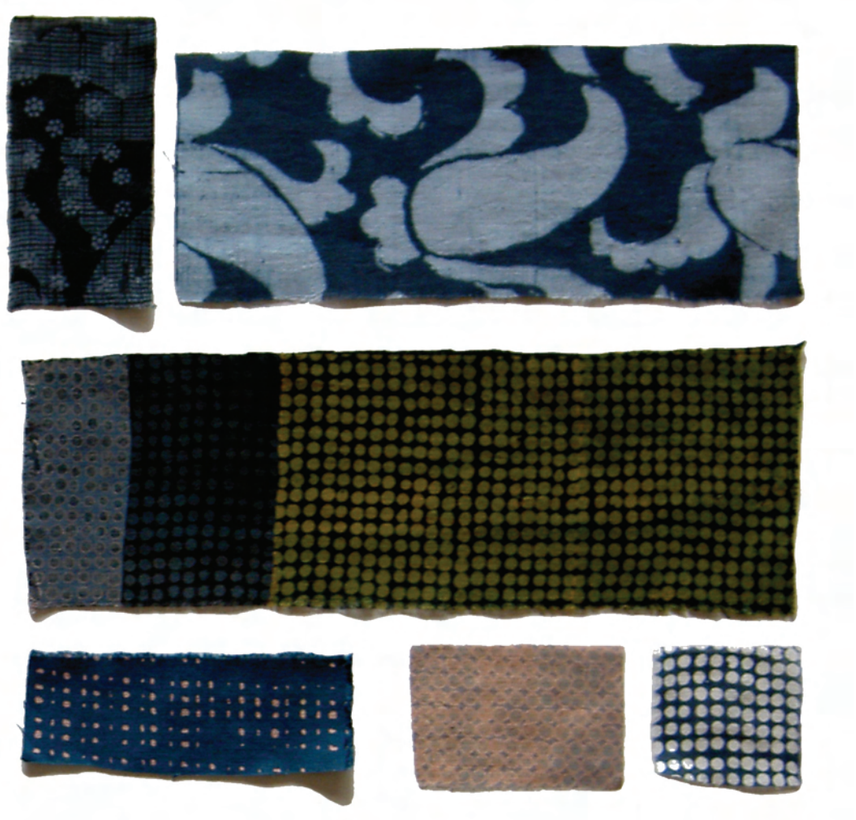




SUMMARY

This exegesis presents the practice of handprinted textile design through the activity of designing, sampling and printing fabric. An underlying issue of my textile print practice is the preservation and dissemination of traditional hand printing skills. As textile print technology advances into digital print production and the textile design motif into computer generated imagery and pattern, traditional textile design hand processes are declining. The objective of this research is to examine and establish refined methods of textile design hand printing, using reactive dye resist techniques onto cellulose fabric.

The relationship between design and practice is significant for a textile designer producing handprinted textiles and relies on a connection of technical knowledge and creative output. This is because textile print design involves the use of general design fundamentals in relation to colour, imagery, pattern and composition as well as an understanding and appreciation for fabric and its tactility. In this instance, producing hand-printed textiles with dyes further requires a technical knowledge of dye classes, chemicals and the ways through which imagery can be applied to the surface of the fabric. The methodology of my research explores a design process that requires creative and craft components as well as a technical comprehension that is informed by chemistry.

The scope and impetus for this project originates in an examination of historical and cultural direct resist techniques. The research has been realised through the trialling of contemporary means for printing resist techniques onto cellulose fabrics using reactive dyes. The outcomes include recipes, detailed processes, fabric sampling and the production of a range of larger textile pieces.

The exegesis component demonstrates how a working method was established and reflected upon with an examination of literature that addresses the overlap between the chemistry of reactive dyes and the needs of the small-scale or designer-maker print practitioner. This extends to the documentation of different reactive dye classes and comparisons of dye stability for a printed end. The investigations carried out in the print workshop are presented with a survey of the repetitious nature of dye testing and sampling. The samples investigate the possibilities of using reactive dyes for the colour with starch and gum paste as the resist. To complement a full suite of hand print techniques these are additionally combined with illuminating discharge and coloured chemical resist processes.

A resist and reactive dye printed sample still on the print table. Mostly the results and colours of the dyes and combined techniques will not be revealed until after the fabric is steamed and washed out.

INTRODUCTION

Textile design involves the use of general design fundamentals in relation to colour, imagery, pattern and composition as well as a knowledge and appreciation for fabric and its tactility. Producing hand-printed textiles further requires a working knowledge of dyes, chemicals and the means through which imagery can be applied to the surface of the fabric. The objective of Technique, Motif, Repetition was to examine methods of textile design hand printing through the study of traditional direct resist means of applying pattern onto cloth. It is ultimately an investigation into my practice through the activity of designing, sampling and printing fabric with reactive dyes.

As textile print technology advances into digital print production and the textile design motif into computer generated imagery and pattern, traditional textile processes are declining. An underlying issue in my practice is the preservation of traditional hand painted and printed skills. Textile design that utilises hand rendered motif, hand printed imagery and techniques adapted from early customs of resist textiles have the incidental qualities of the maker's mark. This project builds on a tradition of reinventing past practices so that they are not forgotten and so that they can still have a place in today's design identity. Additionally the intention of the research was to produce fabric examples, working recipes and print methods of relevance to the designer-maker and the undergraduate textile design student.

A project such as this is as much about the method established and the discoveries made along the way, than it is about one final outcome. The research began with historical and cultural enquiries into direct resist techniques on cloth. The print room based, practical investigation into the application of resist pattern onto fabric, developed the possibilities of using reactive dye for the colour with starch and gum paste as the resist. Illuminating discharge and coloured chemical resist effects were also explored. Discharge printing is a process that removes the colour from a darker coloured base fabric. Reactive dyes are dischargeable. In Illumination printing, the image is discharged out of a base colour, and replaced with another colour in the one step and in coloured chemical resist printing, different types of reactive dyes can be used in a way that one colour will resist the other. Many variables can affect the outcomes of these techniques and they have a tendency to produce a glowing halo effect around the image printed. All the techniques can be unpredictable and achieve inimitable results of a complex and unusual kind. This potential of chance in the techniques was captured and utilised throughout the process.

In contrast to the capricious nature of the techniques I also developed an interest in reactive dye behaviour and how the reactive group of the different types of reactive dyes relate to the

stability and therefore optimal methods of direct print application. This lead to forays into the science of dyes and challenges to bridge the gap between textile technology and textile design practice. This was in order to improve the comprehension and working method for printing with reactive dyes and to look to other types of reactive dyes aside to the ingrained use of Procion MX in the small-scale workshop.

The presentation of this exegesis endeavours to express the activity of textile design through documentation of the explorations undertaken with reactive dyes and by providing an overview of the sampling and fabrics produced. The project did not necessarily evolve in a linear fashion or as a cumulative testing and gathering of knowledge. Its direction was informed by my multiple positions and was motivated by a desire to seek a clearer understanding and expertise of reactive dye print techniques onto cellulose. The expansion of knowledge relates to my varied practice as a textile designer, illustrator, handprinter and lecturer. These different but interconnected roles require recognition of my background in printed textiles and what I brought to the research.

* 1991-1993. Learn the basics of printing with reactive dyes in undergraduate studies on the BA Textile Design program.
* 1993-1999. Employed by Andrea McNamara, Printintin and McNamara & Co, small-scale handprinting production including reactive dyes.
* 1999. Mentorship, Craft Victoria, first tentative exploration of sampling new reactive dye recipe styles and techniques.
* 2002 – present. Teaching practice printed textiles and textile design fundamentals.

The broad framework from which I set out to operate the project within, is based on the notion of design research as outlined by Peter Downton (2003) where for me it points to the primacy of using textile design as a means of carrying out the study. I have also referenced the action research and learning models set out by Nita Cherry (1995, 1999) as an approach to collecting and observing practice based work and to aid in how I developed the systems to analyse and question my practice and outcomes.

The aesthetic and practical value of reactive dye printing techniques for the small-scale environment follow a distinctive methodology shaped by my perceptions of working with printed textiles and how I interpret these perceptions into my teaching practice. Didactic practice offered a point of review and self-critique that ensured I could evaluate my activities. This assisted to translate the project into a design context and tacit outcome, as students require clarity and reliability within a classroom, which can stand in as a model for the constraints of small-scale production.

Through the investigation I have placed value on direct experience, especially the testing and sampling of the dyes and techniques. This first person engagement with the work underlines a phenomenological orientation with focus and interest in how the work appears and manifests. Using design skills and applying them in different situations is often an instinctive way of working. How I learn and gather information and how I digest and impart the information are all constructs of my practice. Thus the overall project evolved from individual involvement with surface decorated textiles and also in the course of teaching and working with reactive dyes and processes rather than following a predetermined hypothesis or template.

In brief summary this exegesis is laid out as follows:

With Squeegee and Screen describes the broad frames of reference through which I as a practitioner operate. Making and the practice of screenprinting can be difficult to discuss, as it tends to be a tacit knowledge of processes and skills learnt and ingrained or invariably hidden. This section includes an explication of the creative projects I embarked upon.

The inspiration and evolution of print addresses the relationship between historical textile research and the practice of textile design. The use of historical reference is approached through the lens of a designer where resource collection is used to inspire motif and pattern generation as well as material and technique application.

The development of technique outlines the context in which the practical investigations took place. This includes a technical literature review and identification of key areas for further exploration and demonstration. A description of the working method employed to investigate reactive dye application for cellulose fabrics is established and reflected upon.

The dissemination of technique looks broadly at the flow on benefits of the research within my community of practice. It includes a grounding of the techniques and working methods established in *the development of technique* as a foreword to the Recipe Instruction Manual developed alongside my teaching practice. This manual can be referred to in order to provide further detail and background of the techniques and methods employed. In closing, I look to future research opportunities and challenges in defining and taking up sustainable screenprinting practice.

WITH SQUEEGEE AND SCREEN

This first section introduces the current climate of hand printed textiles within Australia. Focus is then drawn to the skills and working process of the designer-maker with reference to the scaffold under which I operate. The success and exploration of the techniques surveyed in this project is based upon an accumulation of experiential knowledge discussed later in the section titled *The development of technique*. Whereas here I look to the development of a sense of precedent as also being a part of the reflection and evaluation process.

Recently we have witnessed a flourishing development in the use of pattern across the fashion, homewares and graphic design sectors. This trend has created a demand for all levels of the textile industry to provide individually printed textiles and therefore increased opportunities for the small-scale printer and designer-maker.

Presently Australia is a relatively small producer of printed fabric; over the last two decades the bulk of large-scale commercial print production has moved offshore to China, Vietnam and India. However Australia still supports a medium scale industry of hand and semi-automated printing, such as Signature prints in Sydney, whose products and services cater to a high-end consumer. There has also been a rise in the number of SME (small and medium enterprise) and designer-maker handprinters from the very small to the medium size, producing for their own printed product range as well as doing small run production for external clients, for example Publisher Textiles, Bird Textiles and Printink. This niche of SME printers is creating Australian designed and printed fabrics as well as providing an onshore and useful service to independent designers in related design industries seeking original prints, who can't afford the quantities that offshore commercial printers require.

These small-scale print producers can support the notion of bespoke design - that of a locally designed, made and well-crafted product (McDonough & Braungart, 2002, p.123). 'These initiatives (SME) also serve to illustrate the essential artistic qualities of the industry and the importance of craftsmanship, as opposed to the ubiquitous drive for unrealistically cheap products that characterize the mainstream.' (Denison, 2009, p.154) While I would champion that the handprinting industry in Australia does flourish, it is mostly on a small and independent scale and there has been a slowness to position this type of SME within institutional discussions of the TCF (Textile Clothing and Footwear) industry landscape. In the 2008 review of the Textile Clothing and Footwear Industry 'Building Innovative Capability' undertaken by Professor Green there is discussion that the reduction of local production does limit the choices for local designers and manufacturers. However these submissions revolve around the low-income mass market or look at 'sunrise' ventures and their potential for

growth and export opportunities.

Unlike fashion, lighting or architecture there is not the large consumer based literature available in Australia for hand-produced textiles, although the UK publication *Selvedge* does engage with a notion of the 'romance of cloth' that is filtering into the Australian psyche mostly through word of mouth and the expansion of blogging (Style, 1996). The TCF is assumed to consist of large scale and mainstream outfits but the value of handwork and the insight of the craftsperson and skilled textile specialist should be acknowledged as a player within the industry. While there is a range of companies within this field of handprinted textiles, some of the companies mentioned such as Signature Prints or Nicola Cerini operate at a larger scale. Others function at a more art and design or bespoke level which is just as valid to the culture of the textile industry in Australia.

Handprinting involves the direct application of colour onto fabric, in the form of a dye or pigment suspended in a thickener or print paste. The print paste is pushed with a squeegee through a fine mesh screen, which has predetermined imagery or artwork, usually in repeat, exposed onto it. Large-scale industry is mainly concerned with the controlled application of direct printing; small-scale printers similarly work with direct print application using predominately pigment inks because of their ease of use. Yet there are also a number of designer printers working with hand printed dye application, these include Vixen in Australia as well as Furphy Simpson Studio and Patricia Belford in the UK (Fogg, 2006) as there is a definite appearance or style to fabrics produced in this manner and because of the techniques such as discharge that can be combined with dyes. The appearance and technique of handprinted textiles can only be mimicked by digital print or large-scale production but they do lend themselves appropriately to small-scale runs and one-off sampling and croquis. Fogg (2006, p.9) discusses the popularity of printed textiles in the 21st century and goes on to state that 'designers are eager to harness the convenience of new technology, but never for the sake of novelty. Many prefer to utilise those screenprinting skills learned in the art college workshop, where most experimentation takes place.'

DESIGN AND PRACTICE

The discipline of printed textiles is not just one of surface decoration but also one often described as 'alchemy'. Transforming the cloth requires a designer's creative ability as well as a technical and increasingly scientific know-how. The surface designer must understand the methods of how to apply colour onto the fabric and the ways to make the colour fast to washing and light. Schoeser (2003, p.134) explains how the design process for surface pattern commences from a different approach to constructed textiles. Essentially the impact of painting, dyeing or printing coloured effects onto cloth 'is visual rather than structural: they are a response to the medium rather than the basis of it. The nature of the colourant and the method of its delivery to selected areas of cloth are equal partners in this process.'

The combination of resist and discharge printing techniques with Reactive dyes explored within my research are of relevance to the textile designer and print student because of their creative and exacting nature. Use of the techniques reveals that there are many variables and subtle effects of mark and colour that cannot be achieved with just direct printed colour alone. While it can be difficult to tell the difference between resist and discharge printed fabrics, not least because they can be layered together on the same cloth, the planning process is different for each of the techniques. Discharge and resist processes require separate printpaste recipes and auxiliaries and the development of artwork and screen separations can be dealt with in distinct ways for each technique. The results can be somewhat unpredictable to the inexperienced in that often the effect of a recipe or particular layering of technique cannot be revealed until after the steaming and finishing process. They also have a tendency to achieve incidental results of a complex and unusual kind such as a glowing halo effect around the printed image. Success with the techniques within this research is based upon an accumulation of experiential knowledge and the development of a sense of precedent or examples that can be used for future practice.

As the results can be variable, the techniques operate well at the small scale and are of interest to the handprinter. As Storey (1978, p.137) explains 'this type of work is only possible in small-scale production because, no matter how skilled the chemist, he cannot easily reproduce exactly, time and time again, under controlled conditions and in greater bulk the qualities brought about by such experiments.' With the mass commercialisation of product and introduction of digital print, we are currently witnessing a loss and overshadowing of these small-scale techniques that rely on an intimate knowledge of the secondary behaviour and practised combination of dye, fabric and application required for true discharge and resist effects. In the face of the relative ease of creating complex multihued designs via digital production, capturing these processes on fabric and within technical notebooks as a record of the work will provide an entry point for others to explore the technique's unique qualities.

Design and practice is key for a textile designer producing hand-printed textiles – a connection of knowledge that is both technical and creative is required and these provide similarities to the ideal of the craftsman. There are connections within my project of 'craft nostalgia' and of wanting to connect more with a process or medium, by expanding skills over

time through hands-on experience. There can be no denying the proficiency gained through the personal familiarity of in depth inquiry and figuring things out for oneself as apposed to reading about or being shown how to apply a technique.

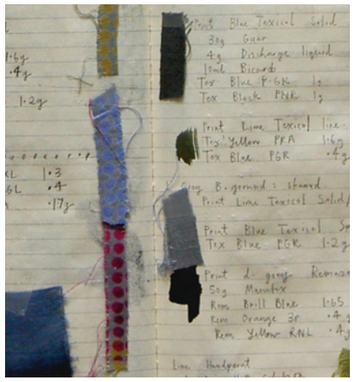
Just as sustainability issues have emerged to the forefront whilst this project has been undertaken also the last few years have witnessed the formalisation and global expansion of a new interest in craft processes and objects. Consequently an extension of the desire for pattern has also been the re-evaluation of the handmade and maker's mark validating the preservation of traditional illustration and handprinting skills within textile design. These two issues have proven to be complimentary and informative to the project presently and for future directions in my practice.

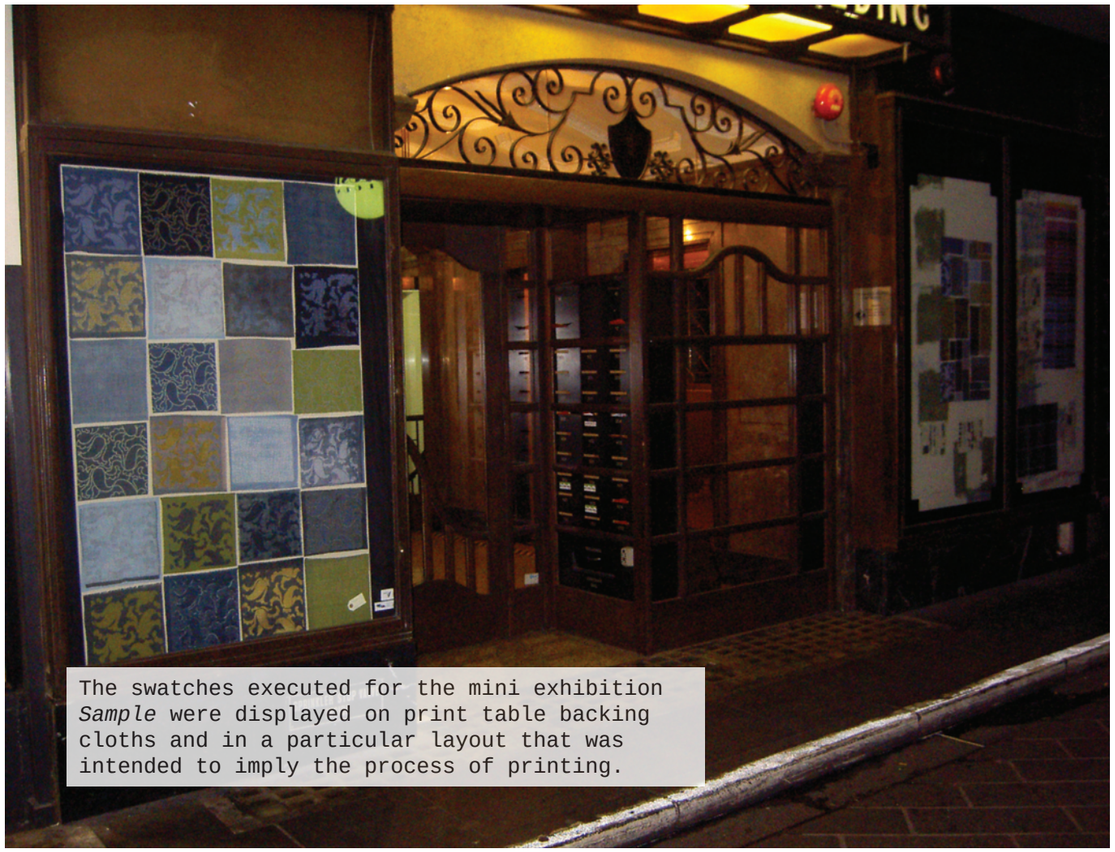
These associations with the craftsman and the mastering of a technique locate the work ethic of William Morris as a model for the broad frames of reference through which I operate as a practitioner. But I found that through the process of the project I was constantly challenging my perception of craft sentimentality and questioning if I had a selectively maudlin outlook of handprinting. While making attempts to justify handprinting I was quite resigned to work with synthetic reactive dyes over natural dyes. William Morris is described in an essay by Watkinson (1997) as both chemist and artist 'Those who study Morris as a designer soon realise how deep was his engagement with colour as structure; and by extension, how important was his research into dyes as the fundamental means of achieving colour control.' (Watkinson, 1997) William Morris's designs for printed textiles are well known but little has been written about his varied research and understanding of the art of dyeing and printing cotton. Often mention is made in a light hearted way of the indigo stain of his hands up to his elbows but he had a very serious and direct involvement in the dyeing, printing and production of his designs. Why was Morris so intrigued by mastering the application of colour to cloth? Why did he feel he had to undertake this himself and could not leave it to the manufacturing arm of his business? Watkinson writes of Morris's intense 'engagement with colour' and we understand from the contents of Morris's library listed in this essay, that he was both interested in the old ways of dyeing with indigo and natural dyes as with the new invention of synthetic aniline colours and that this was fuelled by his colour sensibilities.

Morris in his 1893 essay 'Textiles' describes aniline dyes as being 'one of the most wonderful and most useless of the inventions of modern chemistry, that of the dyes made from coal-tar, producing a series of hideous colours, crude, livid and cheap' (Morris, 1893). What would Morris think of the advance in synthetic dyes were he alive today? Unlike when the first anilines appeared on the market in the 1860's with their problematic colourfastness and reduced range of colours compared with the pure colour of natural dyes. In particular a look at reactive dyes would prove they have all the 'brightness and purity' he demanded of his dye palette. And as a colouring means for the small–scale designer/printer, reactive dyes have perhaps prolonged the art of hand printing within the context of craft practice.

I recognise that there is a certain notion of craft practice in my work and as the project evolved I became more intrigued with how the hand of the designer combined with the maker could then unite with a degree of scientific control. The many variables of recipe and application provide boundless scope for exploration and experimentation. But because in essence you are working blind with the techniques of discharge and resist I recognised there has to be a balance between uncontrolled and restrained application. Initially this research commenced as an investigation into resist techniques using two classes of reactive dyes but by using these, the sampling started to reveal more about the importance of reactivity levels and how this might relate to dye stability. It is clear that some knowledge of chemistry has informed my work as a practitioner. Rather than being supposedly dull or irrelevant to the creative process, a deeper comprehension of technical chemistry has supported my practice. It has empowered me to become more than just an end user of the dyes. I have been able to streamline and account for improvements and develop efficient and resourceful methods of working.

At the outset I perhaps imagined I would consolidate the recipes and techniques sooner allowing more scope within the project to be concerned with designing patterns and artwork separations that would make the most of the techniques and recipes on a creative level. To get the full effect and best out of the two techniques they do require different approaches to application and design. I envisaged developing textile pieces for exhibition as well as small run production. The following accounts for the actions taken in these directions.





The swatches executed for the mini exhibition *Sample* were displayed on print table backing cloths and in a particular layout that was intended to imply the process of printing.

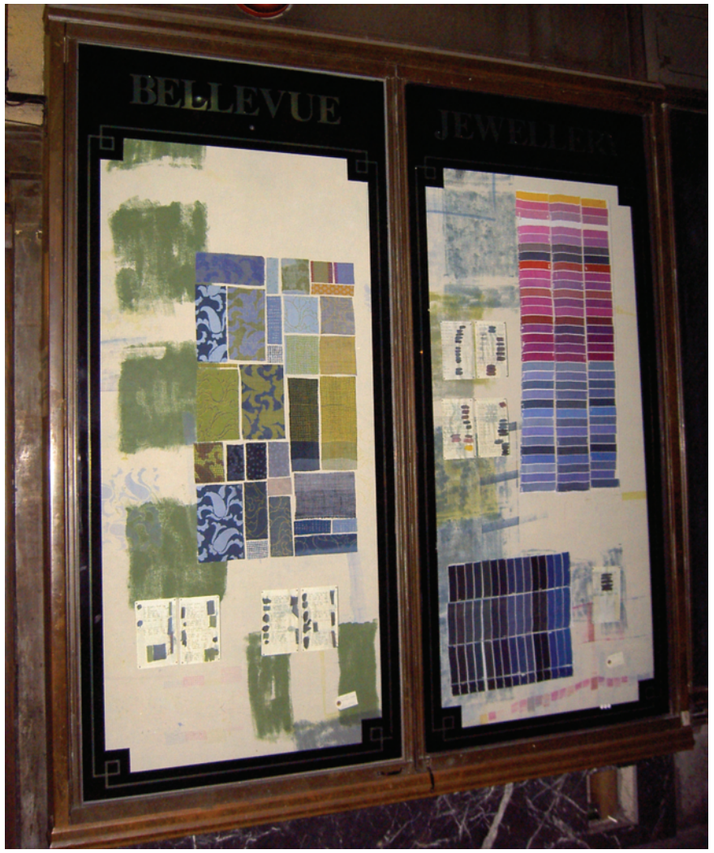
SAMPLE

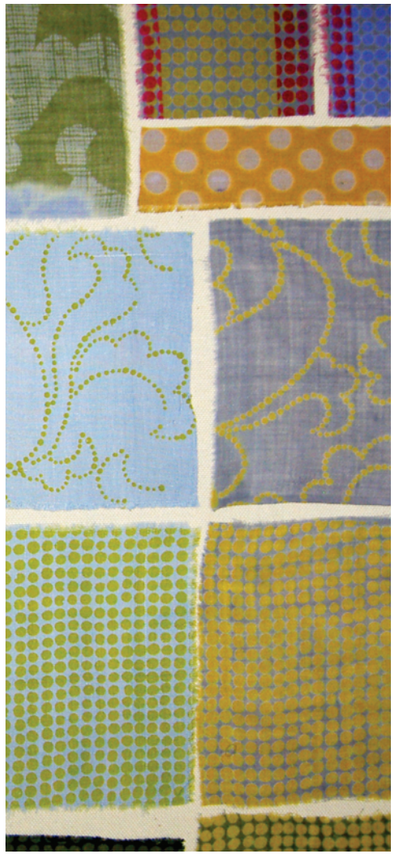
Sample was mounted in July 2006, in a series of three small windows located in Centre Place, Melbourne; an independent exhibition space run as part of Platform Contemporary Art Spaces. The display of *Sample* endeavoured to express the activity of a textile design printer as well as mimic the repetition of the testing process.

At this early stage in the project I established a swatching process as the entry into the application of the dyes. With the sampling I endeavoured to explore the potential of the techniques and in particular how successfully they could be layered together on the one fabric. A series of motifs and patterning devices that revolved around an iconic paisley design were laid out to a consistent repeat unit of 32 x 32cm and these incorporated a range of negative and positive imagery. This artwork once on screen allowed for a variety of layers or print permutations with which to apply the different techniques.

On reflection the experimentations were very much of the moment, occurring at an intuitive level that was definitely the most uncontrolled stage of the research. My approach at this early stage related to the limited knowledge I had of the techniques and was very much in the moment of experimentation. I had a rough comprehension that the illuminating discharge and coloured resist recipes would work but I hadn't identified under which conditions or onto what type of coloured grounds they would be most successful. The experimental approach I took produced some intriguing results especially where the discharge overlapped onto the dextrin resist. The illuminating discharge and coloured resist tended to create a halo effect but I found this was dependent on the order of the prints and the nature of the ground colour – whether it was handpainted or printed.

Additionally the experimental method I employed to create the swatches also raised some fundamental issues on how to best record the process. How do I address the task of documentation when trying to work intuitively? As I worked I did not keep an accurate record of the layering process and I found it difficult to keep up with the array of different thickeners, solutions and base recipes required for all the techniques. The knowledge I took away was implicit and therefore not particularly useful in the wider context of textile design and my teaching practice. But the outcomes of *Sample* did lead me back to the dye lab to undertake a more thorough and planned dissemination of reactive dye application for printed textiles.





The purpose is usually twofold when creating small swatch ideas such as these. There is the creative element of sampling a range of techniques, layers and colour combinations as well as the element of practice that involves the systems and active documentation necessary to produce fabric results that are lasting and replicable.

A detail of the croquis concept for *Palampore sampler in green*.

GREEN

Early in 2010, I submitted an application for the exhibition "Green: a colour and a cause" scheduled to be held in 2011 at the Textile Museum in Washington USA. My textile piece was not accepted for the exhibition, so it has not been executed. However the images of my entry will be used in a looping slide show that is to be displayed as part of the exhibition.

Brief exhibition summary:
Many cultures traditionally associate the color green with nature and its attributes, including life, fertility, and rebirth, and in recent years green has become the symbolic color of environmentalism. This exhibition celebrates green as a color and a cause. (The Textile Museum)

Palampore sampler in green

Lucky that the primary colours agree to converse with each other.
My vocabulary for green references the colour wheel. For example, emerald is a blue-green, lime is yellow-green and even a little mention of red knocks the hue back to a muted green or olive, I also like to use a greeny grey.

Historically, green has been a challenging colour to obtain with natural dyes. While a proliferate hue in nature, not one plant can dye a fabric that is really wash or light fast the same vivid green as she is. Earth colours, such as malachite and verdigris, contain green pigments but these also were not very successful for dying fabric. While together yellow and blue speak of green, in medieval times the two primaries could never meet because of a biblical law prohibiting the blending of different dyestuffs or the double dyeing of cloth.

Synthetic dyes have their own green concerns. As a colour, green isn't a standard hue in the range of Remazol dyes I am investigating. Remazol dyes are synthetic, they are made from petro chemicals, a finite resource, but Dystar does have a GOTS (Global Organic Textile Standard) certification for their Remazol dyes classing them as low-impact and suitable for applying to organic cotton; they also have improved washing out properties and the colours can be stored for a few weeks once mixed with thickeners and auxiliaries. Remazol is a class of Reactive dyes and some of the colours contain small amounts of metals, it is usually the blues, particularly turquoise and brilliant blue BB, these have 2-5% copper present. I am apprehensive about the environmental impact of dyes containing metals, even considered at these low levels. I choose not to use those colours containing copper, limiting my Remazol base palette to 15 standard dye colours, including a green yellow and a red yellow.

A selection of sketchbook elements and pages demonstrating the initial design process.

Without the relationship of blue and yellow, the colour green could never be a part of my palette. The process of sampling and documenting a range of colour recipes and techniques for a dominant yellow green-ended palette that is to be used with a palampore style pattern is the narrative for the textile piece titled 'Palampore sampler in green'. 'Palampore croquis in green' mocks up how the fabric length will evolve.

The sampling process is an important and practical step in handprinted textiles ensuring that everything is planned prior to the printing of yardage. Sampling can also be an immediate and exploratory way of developing the balance of colour and the different possibilities of a croquis design concept. The sampled composition of my piece takes its cues from a traditional and continuous 18th century sampler layout where stitches would have been explored down the cloth length and the fabric rolled up to form a record of the embroiderer's skill and stitch repertoire. My printed piece begins by listing the pure Remazol colours available and then depicts the repetitious action of testing and mixing dyes to explore the range of greens possible through the arrangement of colour marks. Next along are the dye's different applications of printing, handpainting and polychromatic as well as variable combinations of resist techniques that start to test and incorporate the vegetal motifs and layout of the design. Then finally sampling the imagery in repeat using different colour combinations and varying layers of motif and patterning development.

100% handwoven khadi cotton, handpainted Remazol ground and printed with Texicol illuminating discharge techniques.

FRAGMENT

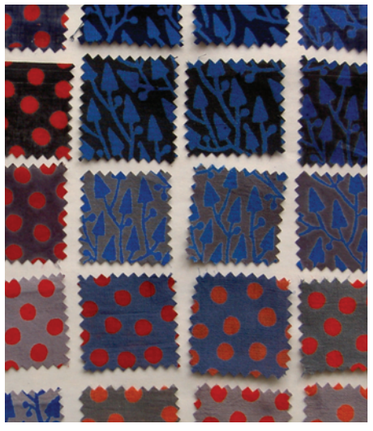
The final fabric pieces of *Fragment* intend to demonstrate the intense contemplation I have undertaken into the nature of cloth printed with dye. In these I endeavored to capture the tactile and colouristic properties of the reactive dyes, the set of techniques developed, and their various applications.

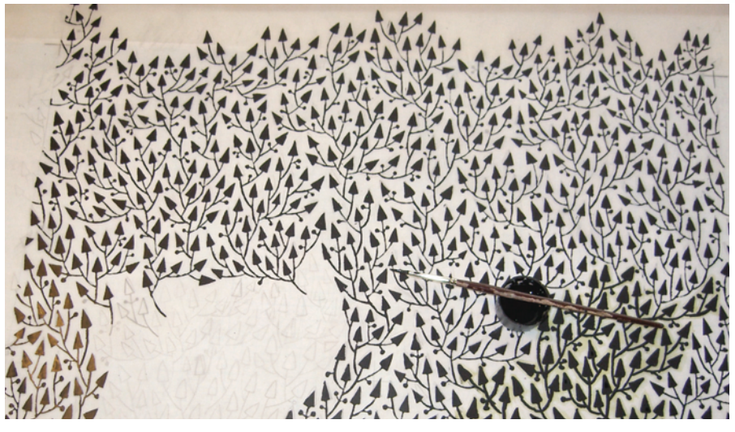
There is a strong visual vocabulary of motif and imagery that you can't help but draw upon as a textile designer. I have no real cultural identity or background of my own to call on as inspiration but I do find an enduring tradition in the classic patterning of the spots, checks, stripes, flora and fauna motifs of textile design. These eternal images recur throughout the history of textiles in many guises and forms and across many cultures, eras and styles. As a designer I find I am constantly reusing and reassembling these common themes of ornamentation that make up my language of textile design. And as an educator, the imagery and vocabulary is constantly evolving as I try to open this textile world to a new generation of designers and makers. In this instance I worked with a universal mode of imagery and patterning that will hopefully not date or look as if it belongs to a particular place or time.

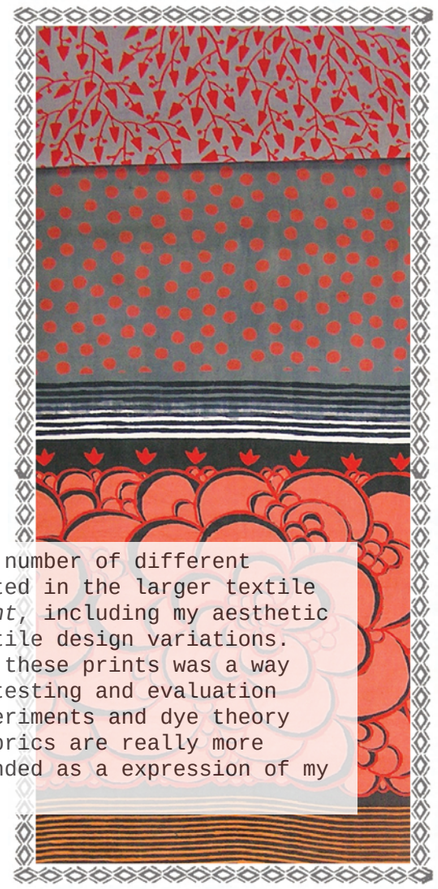
Cross-cultural borrowing and ethnic textile traditions of motif and repetition for resist printing were also inspiration for the patterning used for these final printed pieces. Earlier in my research I investigated the historical background to resist printed textiles. Certain influences affecting the aesthetic development of the imagery and markmaking I developed linked back to early examples of blockprinted Indian resist textile fragments. In particular were the textile examples unearthed in Egypt from two main sites named Fostat and Quesir al-Qadim. The stimulus of historical resource is varied, I mainly looked at how the colour was physically applied and worked onto the fabric surface by means of blockprinting and the types of patterning and motif that would perhaps lend themselves better to the form of colour application I wanted to work with.

The craft ideal of subtle variations being evident in the hand made was explored through a combination of imagery generated by hand and applied to the fabric surface by hand printed techniques. To capture the nature of the mark that is created from carving traditional wood blocks I returned to the foundations of my textile design print skills and worked with hand-generated artwork separations directly onto film. Working in this way might be more time consuming, given CATD, but there is a definite physicality, scale and immediate sense of capturing a mark that appeals to my aesthetic.

In *Fragment* I wished to explore some larger printed pieces to prove the techniques could work in repeat and over continuous metreage. The size and format of the repeat artwork I







The interaction of a number of different aspects is demonstrated in the larger textile pieces titled *Fragment*, including my aesthetic style and use of textile design variations. But as the making of these prints was a way to undergo concrete testing and evaluation of the technical experiments and dye theory I assimilated the fabrics are really more explicatory and intended as a expression of my empirical knowledge.

A range of cotton pieces printed with the chemical coloured resist process. In this technique two types of reactive dyes are used and the fixation of one dye - Remazol, is prevented by the select application of another type - Texicol. Designing for this process simplifies the need for the detailed colour separations that a direct application of contrasting printed dye colours would require.

designed, took into consideration the physical constraints of printing in repeat and also that I did not want to rely on another person to assist with the printing process. I worked to a set half width repeat layout size of 50cm x 50cm that would fit onto a series of sample screens. This way I could personally manage the printing and I also had a series of screens that could be layered and alternated with each other.

The act of printing is quite minimal in comparison to the time and preparation required to set up the screens, devise the recipes and plan the colour palette. However a notion of the makers mark on the textile surface is also carried through to the patching, cropping and hand placement of screens when laying image making down onto a piece of fabric. The passing of the squeegee across the screen, the swipe of the blade to push the print paste through the mesh and onto the cloth is one of control, but also variance, depending on the weight of the cloth and the type of technique. Printing by hand forces you to slow down and commit to the process.

Working with illumination and coloured resist is like working blind, the results are not revealed until after the printed fabric has been steamed, washed out and finished. This often means being careful not to double guess the results too early in the process, as the colours can be deceiving. I deliberately chose a palette made up of brights and darks. These decisions were intended to showcase the illumination and the resist techniques whose main qualities are an enabler of lighter or brighter colour application onto a darker ground. The darks are mostly greys, charcoals and some indigo. Grey can be a difficult colour to mix with dye as the black in both the Remazol and Texicol range often leans to a blue end.

THE INSPIRATION AND EVOLUTION OF PRINT

The following discussion intersects historical textile research with the practice of textile design. Within my practice the use of historical reference is approached through the lens of a designer where visual and factual resource collection is used to inspire the creation of motif and pattern along side the application of printing and dye techniques onto cloth.

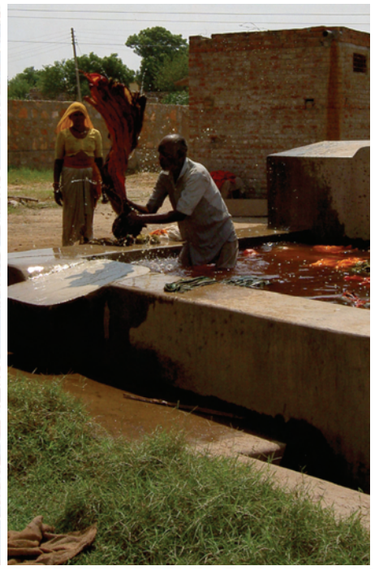
The aim of this project has been to look at the practice of the textile print designer and maker through the investigation of an historical guide – that of resist printed textiles. The resist technique was chosen because it lends itself to small-scale production and also because of its many links throughout textile history to the surface patterning of cloth.

The historical referencing undertaken in the earlier stages of the project was akin to a 'bower bird' process of collecting and assembling a tangible record of the information found. Archives are records that are often 'developed organically as a consequence of ones daily work' (Hill, 2006). They appear contrary and unorganised at first but are really quite utilitarian and may be able to reflect well the range of processes and source material I have collected together. I have termed this resource format a 'bit book'. It began as loose pages compiling together photocopies, images, references and my own sketching. It was an active form of documentation and as I went along I found I was constantly finding and adapting things within this historical part of the investigation that had a common link. I wanted to feel that as a textile designer my ancestry was in piecing together the knowledge of the earlier textile designers and printers. I found I was able to organise the pages and make the resource more relevant by ordering it into a rough historical time frame rather than the dated entries a pre-bound book format might dictate. Which when assembled together did create a narrative and background to the resist technique.

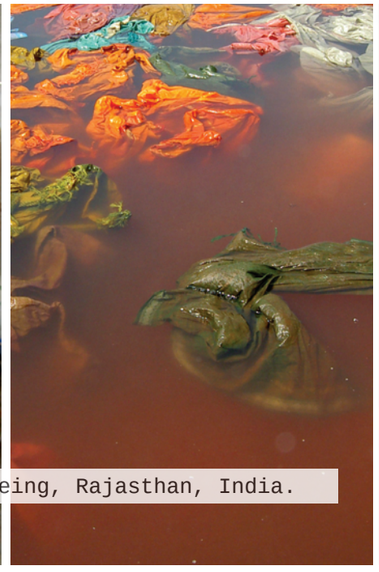
Referencing the past was of most interest to me because of the fine sense of craftsmanship and encapsulation of the method of production that is evident when studying archival textiles. Historically resist printing is one of the earliest forms of surface patterning application onto cloth. Many of the materials and methods used in the traditional examples available to study today, emerged in the Gujarat and Rajasthan region of India. And it is believed that the wider area supported a settled society with a sophisticated material culture from about 3000BC onwards. (Gittinger, 1982)

These practices are still sustained today and the same area is renowned for the production of fine textiles that rely on traditional knowledge and communities of crafts people. I travelled to India in 2004 on a teaching exchange and was able to visit and experience first hand some










Resist printing and dyeing, Rajasthan, India.

of the traditional textile enclaves in Rajasthan. My research process has been influenced by the appeal and affinity I discovered with these Indian textile practitioners. I was touched by the close involvement they have with the materials and working method employed and I was attracted to the vernacular textile image making and motif of the designs. The traditional resists I witnessed in India depend on geographical location, local knowledge and 'secret' ingredients such as particular types of locally sourced mud that is not readily accessible in a Melbourne based studio. The formal research of traditional techniques creates a connection and enables a link with the past and to other cultures and craft practices to help guide and validate the reinvention of resist printed textiles in my practice using more readily available auxiliaries and reactive dyes for contemporary practice.

The study of earlier textile examples and practices from the outset was not intended to be an ethnographic summary, or succinct historical time line of printed resist textiles, nor was I undertaking this part of the research as an historian trying to make new theories on the evolution of printed textiles. Yet historical context when designing and making printed textiles is difficult to ignore because of the large range of archives available to the designer. Furthermore calling upon museum collections, traditional textile styles or the use of past fashions to inspire new themes for example, is implicitly ingrained into the textile design inquiry process. This is a mode of visual research literacy that undergraduate textile design programs promote as an ongoing culture of teaching students about gathering visual narratives to inform the intention of their work and demonstrate its relationship to the given constraints of a project brief.